Introduction

The current critical review aims to explore some of the prevailing beliefs as well as scientific evidence regarding the impact of high-fat diet (HFD) on human health, a type of diet that contains at least 35% fat out of the total calorie intake (Krisanits et al., 2020). Specifically, the scope is set within the relationship between HFD and health conditions, including obesity and certain types of cancer. The topic of HFD and its impact on human health has been subject to widespread societal and scientific attention as well as debate, especially in Western countries wherein dietary intake is characterised by processed food, fatty food, fried food, red meat, and so on, all of which have been linked to various detrimental health conditions (Clemente-Suarez et al., 2023; Rakhra et al., 2020).

Among both realms of discourse exist, on one hand, beliefs and evidence that oppose HDF, including the association between HFD and health conditions such as obesity, cardiovascular diseases, and cancer (NIH, 2024; Wang et al., 2020). Notwithstanding, evidence and views that favour HFD, particularly in specific scenarios involving treatment and dietary style (e.g., keto diet), remain (Burke, 2015; Dowis & Banga, 2021; Harvard Medical School, 2020; Snyder, 2015; Wali et al., 2020). Given what is at stake in terms of public health outcomes and health literacy and the omnipresent role of fat in human diet, it is of critical importance to contextualise the controversial findings and views of HFD in order to provide a nuanced and comprehensive understanding of the role of fat for society at large. It is the hope of this critical review that by examining current scientific literature on HFD and community perspectives, followed by a critical discussion combining both discussions, the

public can gain a more thorough understanding of the matter, thereby incorporating the most suitable dietary practices in everyday life.

Scientific Evidence

Scientific Literature Review

The existing literature on HFD and its association with obesity and cancer seems to concentrate on the obesogenic and carcinogenic effects of HFD, more so than the benefits of HFD in other domains. In terms of the obesogenic effects/pathophysiology of HFD, past research evidence mainly revolves around the discussion of hormonal and metabolic changes induced by HFD. This is evident in studies that associated HFD with insulin and leptin resistance, impaired fat oxidation and glucose metabolism (Chakraborty et al., 2016; Enriquez et al., 2022; Maharjan et al., 2021; Wali et al., 2020; Xie et al., 2023). Notably, the pathophysiology of obesity caused by HFD has largely been studied using animals, primarily mice, thereby suggesting a relatively poor understanding of the pathophysiology of obesity in humans (Duan et al., 2018). Nonetheless, studies have attributed overweight and clinical obesity to HFD both exclusively and in conjunction with other sociocultural and behavioural factors (Fruh, 2017; Teodoro et al., 2014; Wang et al., 2020).

It is worth a moment's attention that central to the association between obesity and HFD is the type of fat involved. Instead of simply interpreting the association as one between "fat" and obesity, it is essential to differentiate between the singled-out association between one type of fat and obesity because some types of fat, including monounsaturated fats and polyunsaturated fats, are essential to and beneficial for the normal functioning of the human body, whereas trans fats and saturated fats, when consumed in excessive amounts, can be

detrimental (Al-Shami et al., 2023). Such a differentiation not only has implications in the scientific field but also ties directly into the community perspectives on HFD in relation to obesity and cancers, which is discussed in the next section (An et al., 2022).

Aside from obesity, relationships between cancer and HFD have also been studied. Bojkova et al. (2020) linked HFD, specifically those containing large amounts of trans and saturated fat, to cancer in developing countries, viewing HFD as a strong predictor for tumour progression and cancer through its inflammatory and oxidative-stress-inducing effects in cases where central adiposity and obesity are observed as well. However, the Mediterranean diet containing large amounts of healthy fat was found to be reversely correlated with cancer and tumour development (Bojkova et al., 2020). Studies done by Uhomoibhi et al. (2022) and Chen et al. (2023) also correlated HFD with breast cancer. The combined findings again point us to the differentiation of different types of fat and, equally importantly, the behavioural or lifestyle mediators of the allegedly straightforward correlation between HFD and health conditions, including obesity and cancer. Overall, the correlation between HFD and obesity seems high, but only in cases involving certain types of fat (i.e., trans and saturated fat) and other coexisting factors, including lifestyle, the latter of which is often unaddressed. Moreover, HFD is also associated with cancer and tumour progression only in cases involving harmful types of fat and the coexistence of obesity and certain genetic attributes.

Research Gap

One of the overarching research gaps currently is the lack of a systematic, comprehensive view in not only the studies that attempt to find associations and the research field in general. To put it into perspective, the majority of the studies on the pathophysiology

of obesity were done on animal models instead of humans, which, combined with the differing physiology and physiological and sociocultural factors, indicate a difficulty of interpolation to humans, thereby undermining the validity of the study findings in terms of whether potential confounding factors were really controlled for (Duan et al., 2018; Bojkova et al., 2020). Besides, systematic reviews or meta-analyses compiling large samples of studies of different designs and diverse participant demographics remain scarce. Given the variety of fat types, lifestyle, and other environmental or social factors (e.g., exercise, smoking, drinking, pollution, food desert, etc.) among human participants can influence the association between HFD and obesity and cancer (Lee et al., 2019; Rassy et al., 2023; Yadav & Jawahar, 2023), future systematic reviews and meta-analyses are warranted, which are supposedly the evidence of the highest level hierarchically (Wallace et al., 2022).

Furthermore, potential biases in some of the reviewed articles remain. For instance, Al-shami et al.'s (2023) study, though correlated dietary intake level with obesity, relied primarily on the self-reporting of the participants on what food they ate the previous night before coming to the laboratory and measured the fat content using universal nutrition standards. Not only can potential measurement errors insofar undermine the validity and reliability of the finding, but the universal nutrition standards may also not apply across the board for all the participants (Rosenman et al., 2014; Wang et al., 2022).

Another reviewed study done by Chen et al. (2024), on the other hand, suffers from not accounting for obvious confounding factors that contribute to tumour progression and cancer, such as lifestyle and environmental and sociocultural factors as previously mentioned. Although Chen et al.'s (2024) study incorporated data from more than 5000 subjects with

cancer or tumours, confounding variables could have influenced the strength of the correlation. For one thing, could it be that the increasing industrialisation and sedentary lifestyle in the past several decades have somehow contributed to the higher rates of obesity alongside HFD (Nicolaidis, 2019)? The statistically significant linearity may also be viewed in relation to flaws inherent to research studies in general (Ioannidis, 2022). Even when studies like Wang et al's (2020) attempt to control for some of these covariates, it is done based on universal metrics as opposed to individualised, accurate measurement, which again leaves much susceptibility for the overall rigor.

Community Perspectives

Just as the scientific evidence and the matter itself often fall on the extreme ends of the continuum, community perspectives do so in a similar fashion, where it is often "no dietary fat" or "high fibre" versus "high dietary fat.". The following section discusses some of the quintessential ideological beliefs and community guidelines of these two schools of thought.

Opponents of Dietary Fat

Ever since the 1940s when academic evidence of how dietary fat is correlated with a number of health conditions came to light, beliefs that dietary fat is to be avoided have dominated in Western countries, including Australia and the U.S. (Fayet-Moore & Pearson, 2015; Landry et al., 2020). Coupling this is the desire for a socially desirable body image that often requires weight loss (Dryer & Ware, 2014). Interestingly, the perception towards dietary fat can sometimes be distorted among many populations. Such is the case with the college students in the U.S., who view no-fat meal options as healthier than unsaturated fat options (Landry et al., 2020). The lack of dietary literacy in regards to the

effects of different dietary fats is also found in other cohorts of U.S. populace, wherein the general level of dietary fat knowledge is low and that even among those who have heard of trans fat and saturated fat, the knowledge of how it correlates with various health conditions is lacking (Albright et al., 1997; Lin & Yen, 2010). Such a phenomenon relates back to the importance of differentiating between good fat and harmful fat; meanwhile, it reflects the larger public health policy framework and relevant academic discourse within the U.S., which are that obesity has been on the rise since the mid-20th century and that dietary fat should be approached with serious caution (CDC, 2024).

The Australian government seems to be operating in similar fashions in terms of dietary fat recommendations, with the Australian Dietary Guidelines (ADG) strongly advising against food high in saturated fat, processed sugar, and so on (Fayet-Moore & Pearson, 2015). Alongside the stance against HFD, particularly those in harmful fats, is the Australian government's response to the obesity epidemic (Warin, 2021). Within the "lay discourse," views of HFD as risky and unhealthy also prevail.

Proponents of Dietary Fat

Community perspectives that promote the intake of dietary fat are characterised by their understanding of different types of fat, special dietary purposes in relation to sports performance or weight reduction, and the caution against health conditions including obesity, cancer, and cardiovascular diseases. For instance, the Mediterranean diet containing large quantities of healthy fat has constantly been recommended by both scientific literature, government policy, and discourses within the public sphere because of its ability to reduce the risk of cancer, obesity, and cardiovascular diseases (Korre et al., 2014; Queensland

Government, 2023; Tosti et al., 2017). Another example is the promotion of the ketogenic diet among the same avenues because of its association with positive outcomes in weight loss, glycemic control, lipid markers, and blood cholesterol (Dowis & Banga, 2021; Garner et al., 2024; Zhu et al., 2022). In addition, HFD was found to increase muscle fat utilisation during exercise, thereby reducing the reliance of muscle on glycogen, which in certain cases enhances physical performance, muscle recovery, and fatty acid availability (Burke, 2015). Importantly, dietary fat intake "was associated with improvements in lipid markers of cardiovascular health" but only in conjunction with low carbohydrate intake (Wali et al., 2020, p. 2), thereby again warranting the nuanced approach to viewing the pros and cons of HFD in relation to other variables.

The promotions of the intake of dietary fat sometimes are not voluntary nor are they results of conscious choice learning towards healthy outcomes; rather, they are the inevitable, perhaps somewhat unconscious, behavioural patterns influenced by the increasingly Westernisation and industrialisation. This can be seen in the case of Australian Aboriginal populations, where the dietary fat levels have increased dramatically, thereby contributing to the heightened levels of cardiovascular diseases and other health conditions (Australian Institute of Health and Wealfare, 2024).

Impact of Perspectives

Whether or how the aforementioned views regarding HFD influenced public opinion, public policy, and scientific research is not straightforward. In some sense, they are the symbiotic entities that coexist with each other, and whether one predates another remains debatable because no study has dealt with such a matter. However, inferences can still be

made. The most obvious one is how the government recommendations, marketing of low-fat dietary alternatives, and scientific research exposing alleged dangers of HFD influenced the public perception in the U.S. from the 1950s up until the end of the 1990s (Stanford et al., 2019). The Australian Dietary Guidelines also, to some extent, influenced the public dietary practices and beliefs towards HFD (Hendrie et al., 2022). Intriguingly, it is the other way around as well because prevalent obesity rates and associated health complications were perhaps what fed into the mobilising of government dietary guidelines and related research in the first place (Stanford et al., 2019). Moreover, the public perception of HFD, coupled with dietary guidelines and research, also influenced how the food industry operates, as can be seen in the commercial practices of labelling "zero/fat fat" on the food packages (Talllie et al., 2017). Although this critical review explicitly mentioned the aforementioned perspectives as those of the community, in the case of HFD and health complications in particular, the boundary between community, public, government, and research is often blurred. Research involves surveys and interviews from the public; the government devises dietary guidelines because of the then prevailing favouring of HFD in Western countries but also influences the public through the guidelines, and so on and so forth.

Critical analysis

The evidence supporting each differing perspective possesses a relatively high level of reliability and validity, but there remain generalizability issues. Notably, the evidence does not conflict with each other, as harmful fat, including trans and saturated fat, is undoubtedly associated with obesity and cancer; instead, it is the differentiation of good versus bad fat that is the key here. In other words, the differing perspectives mentioned previously do not

conflict per se, and the differing argument dissolves once the variable of fat type and specific dietary purposes are taken into consideration.

Overall, the aforementioned perspectives blend peer-reviewed scientific evidence that incorporates both laboratory findings and qualitative data from participants, as well as government reports, constituting relatively reliable and valid supporting sources for both sides. However, issues remain in regard to the generalizability and rigor of some of the evidence mentioned. In addition, more prominent issues are found within the community perspectives themselves as opposed to the research findings or grey literature that explicate them, namely the no-fat diet preferences and blind avoidance of fat regardless of its type among certain populations and the lack of dietary fat literacy in general populations.

More specifically, one of the examples showcasing the generalizability issues is Albright et al.'s (1997) study, which was done well over two decades ago involving low-income American populations in limited numbers of regions, thereby reducing its generalizability to the current dietary fat literacy across all the Western countries; its use of low income as a predictor of poor dietary literacy and obesity status, though having validity, overlooks ethnic outliers whose dietary style is of low fat or contains healthy fat. Similarly, Lin and Yen's (2010) study was done a decade ago, involving self-reported data from U.S. adults. Despite the large sample size (n=1798), the measurement errors and its findings being relatively outdated also reduce its strength. These two pieces of evidence certainly have validity and reliability to a certain degree, but their representation of the community dietary fat literacy, which implicates HFD containing harmful fat types, may not be entirely generalizable or even valid presently.

Another notable instance showcasing biases or compromised research rigor is Landry et al.'s (2020) study that utilises convenience sampling method to examine U.S. college students' perceptions of dietary fat intake. The sampling was done outside the campus dining hall, but the meal options were not specified. It could well be the case that the campus dining hall is the place where low/no-fat diet-leaning students frequent, thereby undermining the validity. Besides, given the sample is overrepresented by first-year students, the results may not be entirely reliable and generalizable when considering that health literacy develops over time and with higher educational levels (Coughlin et al., 2021). Again, these are the supposed research flaws and areas open for interpretations, but the overall strength of the reviewed evidence is high because of large sample sizes, longitudinal design, and the credibility held by both peer-reviewed studies and government guidelines.

In terms of the weaknesses inherent to the perspectives per se, the blind avoidance of fat regardless of its type is of course without scientific ground and mainly the fear induced by propaganda following the obesity epidemic (Stanford et al., 2019). The weakness also manifests as the fixated pursuit of an ideal body image without regard to the fact that healthy fat is an essential part of the human diet (Dryer & Ware, 2014; Landry et al., 2020). The unaccountability of important covariates is observed in the side that promotes HFD as well. For example, although community perspectives, research evidence, and government reports have constantly praised the benefits of the Mediterranean diet in relation to the reduction of cancer, obesity, and cardiovascular disease, they often overlook the fact that special populations need varying levels of healthy fat and other macro- and micro-nutrients for optimal health or performance (Jung & Choi, 2017; Wachsmuth et al., 2022). Compounding

this discrepancy is the neglect of downplaying other important influencing factors, such as lifestyle and environmental risk factors, contributing to obesity and cancer, but this discrepancy is often minimised in government guidelines that offer comprehensive explanations of risk factors of obesity, cancer, and other conditions (CDC, 2024; Department of Health and Aged Care, 2021; Department of Health and Aged Care, 2024).

To summarise, the overall strength of the supporting evidence for the community perspectives reviewed is high given the credibility of the sources, large sample sizes, and other methodological attributes (i.e., longitudinal, random sampling, etc.). The weaknesses lie in the absence of accounting for other variables that can significantly influence whether HFD or low/no-fat diet can really be beneficial, and if so, for what populations under what physical conditions and circumstances?

Discussion

The scientific evidence aligns and conflicts with the community perspectives at the same time. On one hand, scientific evidence that confirms the detrimental effects of HFD that contains mainly harmful types of fat is in congruence with the community perspectives that oppose HFD, which is sometimes done regardless of what types of fat are involved. In other words, this alignment can occur but not in the sense that both parties have the same exact rationale behind their perspectives. On the other hand, scientific evidence that promotes HFD, particularly the Mediterranean diet, ketogenic diet, and those containing large amounts of healthy fat, conflict with the community perspectives opposing HFD. This conflict highlights the most prominent issue of certain community perspectives, which is the disregard of fat type and other individualised special needs. The same dynamics are observed the other way

around, producing a total of four ways how the reviewed scientific evidence both conflicts with and aligns with community perspectives, with differing rationales and motivations at play.

The broader implication lies in accounting for confounding factors for the scientific community and thinking in a systematic way for the general public. Given the poor understanding of the pathophysiology of obesity, the biases and flaws inherent to research studies, and the confounding factors that may not be accounted for, it is advisable for researchers to make disclaimers, hedging their conclusions in a way that accentuates the specific context in which the research was conducted, especially in the abstract section. For the general public, it may be suggestive to consider a wide range of possibilities instead of relying on a single research finding, a webpage, or marketing propaganda as the primary source informing their perspectives on HFD and its relation to obesity, cancer, and other health conditions and outcomes.

Conclusion

In conclusion, this critical review examines the complex relationship between HFD and human health, particularly obesity and cancer. While scientific evidence overwhelmingly links harmful fats to negative health outcomes, it is essential to differentiate between these and beneficial fats, such as those found in the Mediterranean diet. Despite the significant focus on the obesogenic and carcinogenic effects of HFD, a major research gap remains in understanding the pathophysiology of obesity and cancer in humans, with many studies relying on animal models. Moreover, community perspectives are often polarised, with some

advocating for low-fat diets and others supporting high-fat intake, yet both often overlook the importance of fat type.

Reflection

Completing this critical review has contributed to my understanding of the topic, wherein I gained more insights into HFD, its health impacts, and the scientific and social construction of its role and impacts. Knowing the theories is one thing; navigating the complexities involved in writing up this essay is another, the process of which entailed using keywords to search for the most credible and relevant evidence, going back and forth to edit, memorising the things I have written, and connecting the dots to enhance readability and coherency. It has been a daunting yet fascinating experience!

References

Al-Shami, I., Al-Dalaeen, A., Alkhatib, B., & Agraib, L. M. (2023). Dietary fat types consumption association with obesity and coronary indices. *Journal of Nutritional Science*, *12*, e110. https://doi.org/10.1017/jns.2023.92

Albright, C. L., Bruce, B., Howard-Pitney, B., Winkleby, M. A., & Fortmann, S. P. (1997). Development of a Curriculum to Lower Dietary Fat Intake in a Multiethnic Population with Low Literacy Skills. *Journal of Nutrition Education*, *29*(4), 215–223. https://doi.org/10.1016/s0022-3182(97)70201-2

An, J., Wang, Q., Yi, S., Liu, X., Jin, H., Xu, J., Wen, G., Zhu, J., & Tuo, B. (2022). The source of the fat significantly affects the results of high-fat diet intervention. *Scientific Reports*, *12*(1). https://doi.org/10.1038/s41598-022-08249-2

Australian Institute of Health and Welfare. (2024). *Dietary Behaviour*. AIHW Indigenous HPF. https://www.indigenoushpf.gov.au/Measures/2-19-Dietary-behaviour

Bojková, B., Winklewski, P. J., & Wszedybyl-Winklewska, M. (2020). Dietary Fat and Cancer—Which Is Good, Which Is Bad, and the Body of Evidence. *International Journal of Molecular Sciences*, *21*(11), 4114. https://doi.org/10.3390/ijms21114114

Burke, L. M. (2015). Re-Examining High-Fat Diets for Sports Performance: Did We Call the "Nail in the Coffin" Too Soon?. *Sports Medicine*, *45*(S1), 33–49. https://doi.org/10.1007/s40279-015-0393-9

Centers for Disease Control and Prevention. (2024). *Adult Obesity Facts*. CDC. https://www.cdc.gov/obesity/adult-obesity-facts/index.html

Chakraborty, T. R., Donthireddy, L., Adhikary, D., & Chakraborty, S. (2016). Long-Term High Fat Diet Has a Profound Effect on Body Weight, Hormone Levels, and Estrous Cycle in Mice. *Medical Science Monitor : International Medical Journal of Experimental and Clinical Research*, *22*, 1601–1608. https://doi.org/10.12659/MSM.897628

Chen, J., Liu, X., Zou, Y., Gong, J., Ge, Z., Lin, X., Zhang, W., Huang, H., Zhao, J., Phei Er Saw, Lu, Y., Hu, H., & Song, E. (2024). A high-fat diet promotes cancer progression by inducing gut microbiota–mediated leucine production and PMN-MDSC differentiation. *Proceedings of the National Academy of Sciences of the United States of America*, *121*(20). https://doi.org/10.1073/pnas.2306776121

Clemente-Suárez, V. J., Beltrán-Velasco, A. I., Redondo-Flórez, L., Martín-Rodríguez, A., & Tornero-Aguilera, J. F. (2023). Global Impacts of Western Diet and Its Effects on Metabolism and Health: a Narrative Review. *Nutrients*, *15*(12), 2749–2749. https://doi.org/10.3390/nu15122749

Coughlin, S. S., Vernon, M., Hatzigeorgiou, C., & George, V. (2020). Health Literacy, Social Determinants of Health, and Disease Prevention and Control. *Journal of Environment and Health Sciences*, *6*(1), 3061. https://pmc.ncbi.nlm.nih.gov/articles/PMC7889072/

Department of Health and Aged Care. (2019). *Preventing and diagnosing cancer*. Australian Government Department of Health and Aged Care. https://www.health.gov.au/topics/cancer/about-cancer/preventing-and-diagnosing-cancer

Department of Health and Aged Care. (2021, February 25). *Factors that affect weight*. Australian Government Department of Health and Aged Care. https://www.health.gov.au/topics/overweight-and-obesity/factors-that-affect-weight

Dowis, K., & Banga, S. (2021). The potential health benefits of the ketogenic diet: A narrative review. *Nutrients*, *13*(5), 1654. https://doi.org/10.3390/nu13051654

Dryer, R., & Ware, N. (2014). Beliefs about causes of weight gain, effective weight gain prevention strategies, and barriers to weight management in the Australian population. *Health Psychology and Behavioral Medicine*, *2*(1), 66–81. https://doi.org/10.1080/21642850.2013.872036

Duan, Y., Zeng, L., Zheng, C., Song, B., Li, F., Kong, X., & Xu, K. (2018). Inflammatory Links Between High Fat Diets and Diseases. *Frontiers in Immunology*, *9*. https://doi.org/10.3389/fimmu.2018.02649

Enriquez, J. R., McCauley, H. L., Kevin Honglin Zhang, J. Guillermo Sanchez, Kalin, G. T., Lang, R. A., & Wells, J. M. (2022). A dietary change to a high-fat diet initiates a rapid adaptation of the intestine. *Cell Reports*, *41*(7), 111641–111641. https://doi.org/10.1016/j.celrep.2022.111641

Fayet-Moore, F., & Pearson, S. (2015). Interpreting the Australian Dietary Guideline to "Limit" into Practical and Personalised Advice. *Nutrients*, *7*(3), 2026–2043. https://doi.org/10.3390/nu7032026

Fruh, S. M. (2017). Obesity: Risk factors, complications, and Strategies for Sustainable long-term Weight Management. *Journal of the American Association of Nurse Practitioners*, *29*(1), S3–S14. https://doi.org/10.1002/2327-6924.12510

Garner, S., Davies, E., Barkus, E., & Kraeuter, A.-K. (2024). Ketogenic Diet has a positive association with mental and emotional well-being in the general population. *Nutrition*, 112420–112420. https://doi.org/10.1016/j.nut.2024.112420

Harvard Medical School. (2020). *Low-carb and high-fat diet helps obese older adults*. Harvard Health. https://www.health.harvard.edu/staying-healthy/low-carb-and-high-fat-diet-helps-obese-older-adults

Hendrie, G. A., Rebuli, M. A., James-Martin, G., Baird, D. L., Bogard, J. R., Lawrence, A. S., & Ridoutt, B. (2022). Towards healthier and more sustainable diets in the Australian context: comparison of current diets with the Australian Dietary Guidelines and the EAT-Lancet Planetary Health Diet. *BMC Public Health*, *22*(1). https://doi.org/10.1186/s12889-022-14252-z

Ioannidis, J. P. A. (2022). Why Most Published Research Findings Are False. *PLoS Medicine*, *2*(8).

Jung, C.-H., & Choi, K. M. (2017). Impact of High-Carbohydrate Diet on Metabolic Parameters in Patients with Type 2 Diabetes. *Nutrients*, *9*(4), 322. https://doi.org/10.3390/nu9040322

Korre, M., Tsoukas, M. A., Frantzeskou, E., Yang, J., & Kales, S. N. (2014). Mediterranean Diet and Workplace Health Promotion. *Current Cardiovascular Risk Reports*, *8*(12). https://doi.org/10.1007/s12170-014-0416-3

Krisanits, B., Randise, J. F., Burton, C. E., Findlay, V. J., & Turner, D. P. (2020). Pubertal mammary development as a “susceptibility window” for breast cancer disparity.

Advances in Cancer Research, *146*, 57–82. https://doi.org/10.1016/bs.acr.2020.01.004

Landry, M. J., Olvany, J. M., Mueller, M. P., Chen, T., Ikeda, D., Sinclair, D., Schatz, L. E., Connors, P., Valgenti, R. T., Amsler Challamel, G., Gardner, C. D., & Policastro, P. (2020). Faith in Fat: A Multisite Examination of University Students' Perceptions of Fat in the Diet. *Nutrients*, *12*(9), 2560. https://doi.org/10.3390/nu12092560

Lee, A., Cardel, M., & Donahoo, W. T. (2019). *Social and Environmental Factors Influencing Obesity*. NIH.gov; MDText.com, Inc. https://www.ncbi.nlm.nih.gov/books/NBK278977/

Lin, C.-T. J., & Yen, S. T. (2010). Knowledge of Dietary Fats among US Consumers. *Journal of the American Dietetic Association*, *110*(4), 613–618. https://doi.org/10.1016/j.jada.2009.12.020

Maharjan, B. R., McLennan, S. V., Yee, C., Twigg, S. M., & Williams, P. F. (2021). The Effect of a Sustained High-Fat Diet on the Metabolism of White and Brown Adipose Tissue and Its Impact on Insulin Resistance: A Selected Time Point Cross-Sectional Study. *International Journal of Molecular Sciences*, *22*(24), 13639–13639. https://doi.org/10.3390/ijms222413639

Nicolaidis, S. (2019). Environment and obesity. *Metabolism*, *100*(Supplement), 153942. https://doi.org/10.1016/j.metabol.2019.07.006

NIH: National Cancer Institute. (2024). *Fat Consumption*. Cancer.gov. https://progressreport.cancer.gov/prevention/diet_alcohol/fat_consumption

Queensland Government. (2021). *The Mediterranean diet*. https://www.health.qld.gov.au/__data/assets/pdf_file/0032/946049/cardiac-meddiet.pdf

Rakhra, V., Galappaththy, S. L., Bulchandani, S., & Cabandugama, P. K. (2020). Obesity and the Western Diet: How We Got Here. *Missouri Medicine*, *117*(6), 536. https://pmc.ncbi.nlm.nih.gov/articles/PMC7721435/

Rassy, N., Alexis Van Straaten, Carette, C., Hamer, M., Rives-Lange, C., & Sébastien Czernichow. (2023). Association of Healthy Lifestyle Factors and Obesity-Related Diseases in Adults in the UK. *Association of Healthy Lifestyle Factors and Obesity-Related Diseases in Adults in the UK*, *6*(5), e2314741–e2314741. https://doi.org/10.1001/jamanetworkopen.2023.14741

Rosenman, R., Tennekoon, V., & Hill, L. G. (2014). Measuring bias in self-reported data. *International Journal of Behavioural and Healthcare Research*, *2*(4), 320–332. https://doi.org/10.1504/ijbhr.2011.043414

Snyder, W. (2015). *Study: Balanced high-fat diet improves body composition, inflammation*. Vanderbilt Medicine. https://medschool.vanderbilt.edu/vanderbilt-medicine/study-balanced-high-fat-diet-improves-body-composition-inflammation/

Stanford, F. C., Tauqeer, Z., & Kyle, T. K. (2018). Media and Its Influence on Obesity. *Current Obesity Reports*, *7*(2), 186–192. https://doi.org/10.1007/s13679-018-0304-0

Taillie, L. S., Ng, S. W., Xue, Y., Busey, E., & Harding, M. (2017). No Fat, No Sugar, No Salt . . . No Problem? Prevalence of "Low-Content" Nutrient Claims and Their Associations with the Nutritional Profile of Food and Beverage Purchases in the United States. *Journal of the Academy of Nutrition and Dietetics*, *117*(9), 1366-1374.e6. https://doi.org/10.1016/j.jand.2017.01.011

Teodoro, J. S., Varela, A. T., Rolo, A. P., & Palmeira, C. M. (2014). High-fat and obesogenic diets: current and future strategies to fight obesity and diabetes. *Genes & Nutrition*, *9*(4). https://doi.org/10.1007/s12263-014-0406-6

Tosti, V., Bertozzi, B., & Fontana, L. (2017). Health Benefits of the Mediterranean Diet: Metabolic and Molecular Mechanisms. *The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*, *73*(3), 318–326. https://doi.org/10.1093/gerona/glx227

Uhomoibhi, T. O., Okobi, T. J., Okobi, O. E., Koko, J. O., Uhomoibhi, O., Igbinosun, O. E., Ehibor, U. D., Boms, M. G., Abdulgaffar, R. A., Hammed, B. L., Ibeanu, C., Segun, E. O., Adeosun, A. A., Evbayekha, E. O., & Alex, K. B. (2022). High-Fat Diet as a Risk Factor for Breast Cancer: A Meta-Analysis. *Cureus*. https://doi.org/10.7759/cureus.32309

Wachsmuth, N. B., Aberer, F., Haupt, S., Schierbauer, J. R., Zimmer, R. T., Eckstein, M. L., Zunner, B., Schmidt, W., Niedrist, T., Sourij, H., & Moser, O. (2022). The Impact of a High-Carbohydrate/Low Fat vs. Low-Carbohydrate Diet on Performance and Body Composition in Physically Active Adults: A Cross-Over Controlled Trial. *Nutrients*, *14*(3), 423. https://doi.org/10.3390/nu14030423

Wali, J. A., Jarzebska, N., Raubenheimer, D., Simpson, S. J., Rodionov, R. N., & O'Sullivan, J. F. (2020). Cardio-Metabolic Effects of High-Fat Diets and Their Underlying Mechanisms—A Narrative Review. *Nutrients*, *12*(5), 1505. https://doi.org/10.3390/nu12051505

Wallace, S., Barak, G., Truong, G., & Parker, M. W. (2022). Hierarchy of Evidence within the Medical Literature. *Hospital Pediatrics*, *12*(8), 745–750. https://doi.org/10.1542/hpeds.2022-006690

Wang, L., Wang, H., Zhang, B., Popkin, B. M., & Du, S. (2020). Elevated Fat Intake Increases Body Weight and the Risk of Overweight and Obesity among Chinese Adults: 1991–2015 Trends. *Nutrients*, *12*(11), 3272. https://doi.org/10.3390/nu12113272

Wang, P., Huang, J., Sun, J., Liu, R., Jiang, T., & Sun, G. (2022). Evaluating the Nutritional Properties of Food: A Scoping Review. *Nutrients*, *14*(11), 2352. https://doi.org/10.3390/nu14112352

Warin, M. (2021). No Appetite for Change: Culture, Liberalism, and Other Acts of Depoliticization in the Australian Obesity Debate. *Sociological Research Online*, 136078042110494. https://doi.org/10.1177/13607804211049456

Xie, D., Zhang, Y., Guo, Y., Xue, X., Zhao, S., Geng, C., Li, Y., Yang, R., Gan, Y., Li, H., Ren, Z., & Jiang, P. (2023). The impact of high-glucose or high-fat diets on the metabolomic profiling of mice. *Frontiers in Nutrition*, *10*. https://doi.org/10.3389/fnut.2023.1171806

Yadav, H. M., & Jawahar, A. (2023). *Environmental Factors and Obesity*. PubMed; StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK580543/

Zhu, H., Bi, D., Zhang, Y., Kong, C., Du, J., Wu, X., Wei, Q., & Qin, H. (2022). Ketogenic diet for human diseases: the underlying mechanisms and potential for clinical implementations. *Signal Transduction and Targeted Therapy*, *7*(1). https://doi.org/10.1038/s41392-021-00831-w